

REMARKS

Claims 1-36 are pending in this application. The claims have been rejected over JP '209 alone, Kalnins alone, and the combination thereof.

The Restriction Requirement

Applicant thankfully acknowledges the withdrawal of the restriction requirement and examination of all the pending claims.

Rejection – 35 U.S.C. § 102(b) over JP '209

The Office has rejected claims 11-13 and 24-26 under 35 U.S.C. § 102 (b) as being anticipated by JP '209 (Japanese Patent 4-229,209) for the reasons listed on page 2 of the Office Action. Applicant respectfully traverses this rejection.

The rejected independent claims recite a structural member that is made by a process where a composite perform is subjected to compression while flowing an electrical current with a voltage across the preform. The Office has not substantiated, however, where such a limitation is taught by JP '209.

Instead, the Office argues that this limitation is a process limitation which does not affect the product in a structural sense and hence does not impart patentability to the claims. Applicant respectfully disagrees with the Office's rationale.

The skilled artisan would have recognized that the existence of compression while the current is flowed across the perform impacts the structure of the product in potentially 2 ways.

First, as described in paragraphs 20, 28, 36, and 41 of the specification, such compression allows the composite perform to take any number of different shapes because of the compression process. Second, the composite perform is made of a reinforcement material (i.e., fibers) in a polymer matrix. When this is heated, the polymer matrix begins to melt. In this slightly molten phase, the polymer matrix containing the reinforcement material is compressed. The result of the melting and compression must surely impact the structure of the material, even if the overall shape of the structure is not modified. Thus, the Office's argument that the "product would be the same whether or not the compression is performed" is simply not true.

Thus, the Office has not shown that JP '209 teaches each and every limitation in the claims. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 102(b) over Kalnins

The Office has rejected claims 27-34 under 35 U.S.C. § 102 (b) as being anticipated by Kalnins (U.S. Patent No. 4,193,956) for the reasons listed on page 3 of the Office Action. Applicant respectfully traverses this rejection.

Independent claims 27 and 34 currently contain the limitation that the apparatus contains means for flowing the current across a composite structure while compressing the composite perform without insulation.<sup>1</sup> Independent claims 35 and 36 contain the limitation that the apparatus contain means for compressing the composite structure at a pressure ranging from about 0.7 to about 4.1 MPa.

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<sup>1</sup> Support for this amendment can be found paragraphs [43-45] of the original specification.

The Office, however, has not substantiated its burden of showing that Kalnins teaches or suggested either of these limitations. Kalnins describes a process and apparatus for curing thermosetting resins and elastomers. *See Abstract.* The apparatus contains a mold 2 that consists of an electrically non-conductive or insulating material. *See column 4, line 8 and column 6, lines 51-53.* Thus, the apparatus contains electrodes 3 and 6 that are used to pass an electric current through the composition 1. *See column 6, lines 53-56.* The apparatus applies pressure to the composition 1 via mold 2 while an electric current is passed therethrough. *See column 6, lines 60-66.* The pressure that is applied ranges from at least 0.5 tons/inch<sup>2</sup> up to several tons/inch<sup>2</sup>. *See column 4, lines 25-27.*

In light of this disclosure, it is unlikely that the Office could substantiate that Kalnins discloses the claimed limitations discussed above. Since Kalnins uses a mold that is made of an insulating material, the Office has not shown that this reference describes using means without insulation. As well, the pressure range described by Kalnins greatly exceeds that recited in the claims.<sup>2</sup>

Thus, the Office has not shown that Kalnins teaches each and every limitation in the rejected claims. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

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<sup>2</sup> A pressure of 0.5 tons/inch<sup>2</sup> converts to a pressure of about 6.9 MPa.

Rejection – 35 U.S.C. § 103 over JP ‘209 & Kalnins

The Office has rejected claims 1-10 and 14-23 under 35 U.S.C. § 103(a) as being unpatentable over JP ‘209 in view of Kalnins for the reasons listed on pages 3-4 of the Office Action. Applicant respectfully traverses this rejection.

The Office recognizes that JP ‘209 fails to teach several limitations that are recited in the rejected claims. The Office contends that such limitations are disclosed by Kalnins. The Office concludes that it would have been obvious to modify the process of JP ‘209 as taught by Kalnins to facilitate the formation of the composite without overheating portions thereof.

Such a motivation, however, is not sufficient to combine the references in the suggested manner. The teachings of the prior art can only be combined where there is some teaching, suggestion, or motivation to do so found “either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.” *See M.P.E.P. § 2143.01.* The Office, however, has not shown where the proposed motivation is found either in the cited references or in the knowledge available to the skilled artisan.

Further, the skilled artisan would have understood that JP ‘209 did not have any problems with overheating. JP ‘209 describes temperatures of 300° C in paragraph [0042], 270° C in paragraph [0047], and 320° C in paragraph [0051]. All of the temperatures these are well below the upper temperature of 500°C disclosed by Kalnins. *See column 5, line 51.* Having such low temperatures described in JP ‘209, the skilled artisan would have had understood that no overheating existed in JP ‘209 and, therefore, no reason existed to modify the disclosure of JP ‘209.

Moreover, the Office has not shown that even if the combination was proper, the combined references would teach or suggest each and every claim limitation. Several dependent

claims recite that the compression occurs at a pressure of about 0.7 to about 4.1 MPa. The Office has not substantiated the teachings of the combined references teach or suggest this pressure range.

Thus, the Office has not substantiated that the skilled artisan would have considered the rejection claims obvious over the proposed combination of JP '209 and Kalnins. Accordingly, Applicant requests withdrawal of this rejection.

### CONCLUSION

For the above reasons, Applicant respectfully requests the Office to withdraw the above grounds of rejection and allow the pending claims.

If there is any fee due in connection with the filing of this Amendment, including a fee for any extension of time not accounted for above, please charge the fee to our Deposit Account No. 50-0843.

Respectfully Submitted,

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CUSTOMER NUMBER

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